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PLATE VII.

FIG. 1. Last ventral segment of male *P. ferrea* Mels.
FIG. 2. Same female.
FIG. 3. ♂ *P. thureura* Say.
FIG. 4. ♀ *P. thureura* Say.
FIG. 5. ♂ *P. cyanipes* var. *californica* n. var.
FIG. 6. ♂ *P. cyanipes* Say.
FIG. 7. ♀ *P. cyanipes* var. *californica* n. var.
FIG. 8. ♀ *P. cyanipes* Say.
FIG. 9. Last ventral segment ♂ *P. montanus* n. sp.
FIG. 10. ♀ *P. montanus* n. sp.
FIG. 11. ♂ *P. bridwelli* Van Dyke.
FIG. 12. ♀ *P. bridwelli* Van Dyke.
FIG. 13. ♀ *P. debilis* Lec.
FIG. 14. ♂ *P. fraseri* n. sp.

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NOTES ON A RARE BUPRESTIS.

BY W. KNAUS,

MCPHERSON, KANSAS.

Buprestis confluenta Say, 1823.
Buprestis confluens Leconte, 1859.
Buprestis tesselata Casey, 1909.

As an example of the laconic taxonomic style of the most famous early North American entomologist, Thomas Say, his description of this species is given as it appears on page 60 of Say's American Entomology, Vol. I, John L. Leconte Editor London Edition, Henry Sothern & Co., 136 Strand, 36 Picadilly and 10 Tower Street, City, 1859:

" *Buprestis Confluenta* [*Confluens*].—Specific character. Green, polished, punctured; elytra with confluent yellow spots.

" Buprestis confluenta nobis, Jour. Acad. Nat. Sci., Vol. III, p. 159.

" Desc. Body bright green, punctured; head densely and confluently punctured; an obsolete indented longitudinal line, more distinct on the vertex: antennæ purplish, the basal joint rufous: thorax densely and confluently punctured, more particularly on the anterior and lateral margins; in the middle of the disk, these punctures are somewhat sparse: scutel rounded, convex: elytra striate, slightly tinged with violaceous; the striæ and interstitial lines, slightly punctured; very numerous transversely confluent light yellow dots: tip slightly obliquely truncated, acute at the suture, but not mucronate or dentate: edge entire; tarsi purplish-brown.

"Obs. I can not find any notice of this very fine insect in any attainable author, and having never obtained an individual in the Atlantic States, I think it highly probable that it is altogether limited in its range to the Western region.

"A specimen was presented to me, when at Fort Osage on the Missouri River, by Lieut. Scott, of the Rifle regiment, a gentleman, whose extraordinary skill as a marksman has almost passed into a proverb in that country. I obtained two other specimens during the progress of Major Long's exploring party towards the mountains.

"The thorax varies in being in some specimens of a bright blue color, in others purplish."

Although described almost one hundred years ago, this brilliantly colored species has remained rare in collections. In a collecting experience of 37 years the writer has only taken four specimens: a female at Edmond, Norton County, Kansas, in July, 1885; a female at Salina, Kansas, in 1889; a male at Canadian, Tex. (dead, from a cottonwood stump), in 1903, and a female at Crow, Colo., 35 miles southwest of Pueblo, June 28, 1918.

J. W. McColloch and W. A. Hays, of the Department of Entomology at the State Agricultural College, Manhattan, Kansas, while collecting *Cotalpa lanigera* Linn. from willows and cottonwoods along the Kansas River, June 23, 1920, found *Buprestis confluenta* in abundance feeding and breeding on the young cottonwoods. Not recognizing the rarity of the species, they collected only 34 specimens when they could have taken scores more of them.

Col. Thos. L. Casey in his publication on Buprestidæ in 1909 gave a lengthy description of the species based on the specimen I sent him taken at Edmond, Kansas. His description of *B. tesselata* was also made from the specimen I sent him from Canadian, Tex. The Agricultural College, Department of Entomology, having placed the material collected last June in my hands for study, I find there is no doubt that Col. Casey's *tesselata* is a synonym. The chief characteristic of *tesselata* is in the yellow medial ventral surface. The Manhattan material shows this to be a sexual character, the males having the yellow markings. Professor McColloch verifies this by saying several pairs were taken, the males showing the yellow markings.

My studies show the following:

Of the 34 specimens collected at Manhattan 10 were males.

Length of females, 20 mm.

Width of females, 7 mm.

Length of males, 16 to 17 mm.

Width of males, 5 to 6 mm.

These measurements are all larger than those given by Col. Casey.

The yellow dots on the elytra average more nearly confluent on males. Fascia at apical third extends toward apex and along suture to apex. Apex of elytra always coppery. Thorax green to blue-green. Smooth medial area of thorax brassy. The more brassy the thorax the more pronounced the coppery ventral surface.

Of the ten males one shows the pro-meso- and metasternum light yellow. Another male, metasternum light yellow; no other yellow ventrally. Another male, metathorax yellow, widening toward apex. Meso- and metasternum centrally yellow. Lateral mesosternum and meso-episternum each with an inconspicuous yellow dot. First ventral centrally yellow, widening apically, with central streak green. Inconspicuous lateral yellow dots. Second ventral, two medially placed yellow dots lengthened laterally. Third ventral, two small mediolaterally placed yellow dots. Fourth ventral with a central yellow line parallel with ventral suture. Fifth ventral, yellow line basally on right extending to near margin. Left side, a yellow dot. Underside of posterior femurs yellow. Thorax, apical angle tipped with yellow. Basal angle with yellow line extending along margin one third of length of thorax. A short yellow line parallel to marginal line, one third of distance from margin to central smooth spot.

Another male marked as in preceding except that lateral yellow dots are lacking on meso- and metasternum, and meso-episternum, and laterally on first ventral. The yellow lines on the fifth ventral are equal in length on each side. Thoracic yellow lines more restricted than in preceding species; yellow spots on elytra more nearly confluent than the average specimen.

From the above descriptions it is evident that there is marked variation in individuals of this species.